

CLAIM AMENDMENTS

1. (currently amended): A temperature sensitive polymer having a lower critical solution temperature that changes during incubation in an aqueous solution or medium, which polymer is a homopolymer of a hydrophobically modified hydroxyalkyl(meth)acrylamide or an interpolymers of a hydrophobically modified hydroxyalkyl(meth)acrylamide and up to 50 mole% of comonomers selected from acrylates, methacrylates, acrylamides, methacrylamides, N-vinylpyrrolidone, vinyl lactates and vinyl ethers.
2. (previously presented): The polymer of claim 1, wherein the polymer comprises a hydrophobic group which is bound to the hydroxyalkyl (meth)acrylamide by a hydrolysable bond.
3. (previously presented): The polymer of claim 2, wherein the hydrophobic group is alkyl, aryl, lactic acid or lactic acid oligomer.
4. (previously presented): The polymer of claim 3, wherein alkyl is selected from the group consisting of methyl, ethyl, propyl, butyl, pentyl and hexyl.
5. (previously presented): The polymer of claim 1, which polymer is a homo or interpolymers of an (N-(2-hydroxyalkyl) (meth)acrylamide lactate).
6. (previously presented): The polymer of claim 5, which polymer is selected from the group consisting of homopolymers and interpolymers of (N-(2-hydroxyethyl) methacrylamide lactates) and (N-(2-hydroxyethyl) acrylamide lactates).
7. (previously presented): The polymer of claim 1, wherein the polymer comprises at least one component selected from monolactates, dilactates, trilactates and tetralactates.
8. (previously presented): The polymer of claim 1, wherein the polymer is a copolymer of (a) at least one hydroxyalkyl (meth)acrylamide (lactate)_n, wherein n represents the number of

lactate units, n being at least 3, and (b) at least one hydroxyalkyl (meth)acrylamide (lactate)_n, wherein n is 0, 1 or 2.

9. (canceled)

10. (previously presented): The polymer of claim 1, having a lower critical solution temperature before incubation below human body temperature and a different lower critical solution temperature after incubation above human body temperature.

11. (previously presented): A controlled release system comprising the temperature sensitive polymer of claim 1 and an active ingredient.

12. (previously presented): The controlled release system of claim 11, wherein the polymer is in the form of a polymeric micelle in which a hydrophilic block is present which hydrophilic block comprises a polyalkyleneglycol.

13. (previously presented): The controlled release system of claim 11, wherein the system is in the form of a hydrogel.

14. (previously presented): The controlled release system of claim 13, wherein the hydrogel is an ABA block copolymer, wherein block A is a temperature sensitive polymer of claim 1 and B is a hydrophilic polymer.

15. (previously presented): A targeting drug composition, comprising a drug and particles of the controlled release system of claim 11.

16. (previously presented): The targeting drug composition of claim 15, which further comprises a homing device.

17. (new): The polymer of claim 2, wherein the bond is selected from esters, orthoesters, amides, carbonates, carbamates, anhydrides, ketals, and acetals.
18. (new): The polymer of claim 8, wherein under (a) n is an integer of 3 to 10.
19. (new): The controlled release system of claim 12, wherein the hydrophilic block comprises poly(ethyleneglycol).
20. (new): The controlled release system of claim 14, wherein B is polyalkyleneglycol.
21. (new): The controlled release system of claim 20, wherein B is poly(ethyleneglycol).
22. (new): The targeting drug composition of claim 15, wherein the particles have an average diameter of less than 200 nm.
23. (new): The targeting drug composition of claim 22, wherein the particles have an average diameter in the range of 10 to 100 nm.
24. (new): The polymer of claim 8, wherein the mole % of (a) in (a) + (b) is 0.1%-99%.
25. (new): The polymer of claim 24, wherein the mole % of (a) in (a) + (b) is 1%-50%.